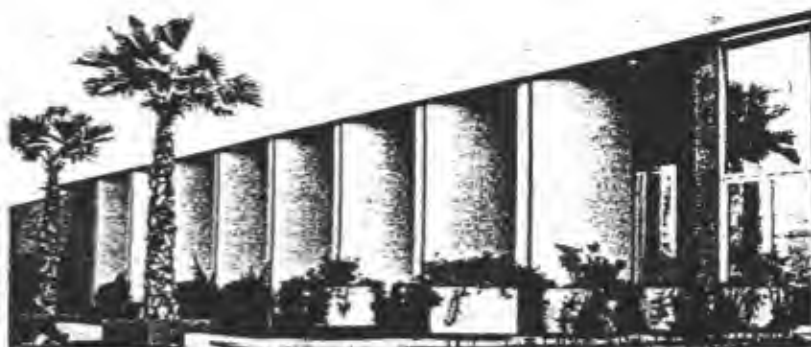


PORTLAND DIVISION NEWS



Volume 3, No. 10

NOVEMBER, 1968

Portland, Oregon

Portland ES Division Gets UGN Award

Five Superjets to Be Used in 747 Fight Test Program at Boeing

The first 747 superjet was presented to the world at the September 30 rollout. Now, Boeing is aiming for the superjet's first flight. Starting with that first flight, the 747 will undergo a 10-month-long flight test program which will involve five airplanes.

Each of the planes will carry out specific flight-test objectives.



Flight-testing of a 747 engine began when the Pratt & Whitney JT9D was installed on a modified B-52. Notice that the large superjet engine does not leave exhaust trails. This fact, its quietness and its 43,500 pounds of thrust are three major features of the 747 powerplant.

The Boeing-owned No. 1 airplane will perform aerodynamic tests, and stability, control, propulsion system, avionics and structural testing.

Propulsion fuel and electro-mechanical systems and avionics will be tested on the second 747.

The third superjet has been earmarked principally for flight-load survey. Equipped with accurate measuring devices, this airplane will be flown through numerous maneuvers to gather flight data. The information thus obtained, together with wind tunnel predictions will be correlated and used to apply realistic loads to the static test vehicle.

Nearly half the flight-test hours for the fourth airplane will be concentrated on functional and reliability testing. This aircraft will spend the remainder of its test period



The employees of E/S Portland Division earned a United Good Neighbors Blue Ribbon for the campaign that ended October 23, 1968. Mr. Gene Pfiffer, U.G.N. Associate Chairman, made a special visitation to plant to present the award to W. M. Rozell, Vice President and General Manager, John Zivic, Asst. Manager, Phil Grogan, Chief Steward and Chairman of the Drive, Mel Gibson and Oscar Beech, Day Shift.

David Hines and Henry Mallory, Swing Shift, Jack Roney not present.



on electro-mechanical and miscellaneous systems tests.

The fifth 747 will test aerodynamics, stability and control. The five airplanes in the flight-test fleet will amass a total of approximately 1,400 flight hours by the time the flight-test program is completed and the airplane certified to carry passengers in 1969.

Two ground-test airframes will be used in separate static and fatigue test programs.

In the static tests, the airframe will be subjected to stresses and loads far in excess of those it will experience in airline service. This testing (eventually to destruction) will

allow Boeing engineers to establish precisely the 747's strength and growth potential. The static tests will begin in early 1969.

In the fatigue test program the second 747 ground-test airframe will undergo repeated operation of its flight controls and cabin pressurization systems. These tests will be carried out at an accelerated rate designed to compress the equivalent of years of regular airplane operation into months.

The goal of these programs is to prove an airframe life of 60,000 hours for the 747—equivalent to more than 15 years of normal airline operation.

Portland Division Safety Committee



PHIL CROGAN, Chairman



KEN VILES



HILLARD CRANDELL



ROY OLSON



WALLY OBERG



KEN PAYNE

ES Employee Sets State Record Recently



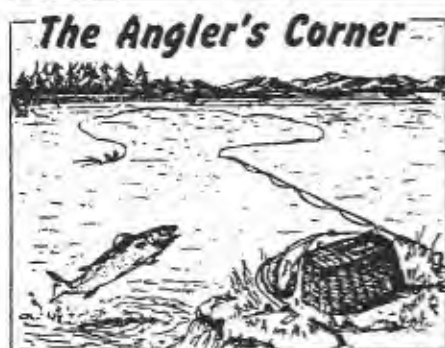
Dennis Welty, day shift clerk in Department 1, on Sunday, September 1 1968, captured the Oregon State Scuba record Ling Cod off the beach at Pacific City. He was near "Haystack" rock at a depth of about 45 feet when he came upon his prey in a rock cave. After careful aim with the underwater spear gun, he successfully bagged the fish which weighed out at 44 lbs., 8 oz. for the record. Prior to this, Dennis has also captured a state free diving record with a 40 lb., 12 oz. octopus. This catch had a diameter of 9 feet from tentacle to tentacle.

Welty started diving in 1961 and is presently an active member of the Portland "Sea Lions" Skin Diving Club. He has recently won a berth on the Oregon Scuba team which will be competing in the International Scuba Diving Championships to be held at Monterey, California on November 9th and 10th.

Participants in this contest will represent all states of the United States, Canada, and Mexico. Electronic Specialty is proud of these recent accomplishments of one of our employees.



DENNIS PARR in the land of the palm trees. Fishing line—wish you were here.



by GEORGE MacALEVY



You deer hunters take note of this big Mule Deer Buck shot by Lloyd Kazera of Dept. 620 Swing Shift. Lloyd was hunting just South of Divide Wells when he ran onto this brute. Divide Wells is 30 miles south of Heppner. Lloyd was hunting with his parents at the time.

The antlers, 4 points on each side, measure 28½" across at the widest points and buck weighed 185 pounds dressed out. This is a good big Muley in anybody's book. The deer was running directly away from Lloyd when he made a (1) shot kill at 85 yards. The gun was a 30-06 and the bullet a 150 grain soft point.



Jim Munsey of Dept. 601 Swing, shot himself a three-point Blacktail in the Trask River watershed that field dressed at 135 lbs. Jim was toting a Winchester model 88 in .308 caliber. The buck fell to one shot using a 150 grain Hornaday spine point. This last point of information tells us Jim loads his own. Jim was hunting with a friend when the buck appeared and gave him a good shot at 75 yards.

SPORTS

by Bob Regan

SCORES!

BOWLING: The young bowling season has only been underway for 7 weeks so it is too early to establish a strong team or high scorer trends. We might mention though that Bob Gedde came up with a hi-series scratch of 623 and Jim Manson with a hi-game scratch 222 in the first few weeks of bowling. Dave Albert of the Swing-Shifters had a 151 triplicate and Howard Stark bowled a 216 the first night of howling.

BASKETBALL: The E/S cagers are already setting up practice sessions. If you have the inclination and the ability contact George Miller, Dept. 608-Drills. George stated he needs players for all positions.



GOLF: A wet, late summer merged into a wet fall and through the wind and rain the hardy E/S golfers carried on. The final Course and the newly crowned champions play-offs were held at the Arrowhead are:

MATCH PLAY

First Division	Second Division
Bob Neffendorf	Bill Miller

The runner-ups were Don Woods and Don Eubanks in their respective divisions.

Medal Play

George Miller	Gerry Nagel
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Best Ball Play

First Division—George Miller-Bob Neffendorf
Second Division—Don Eubanks-Joe Marrow

The champs in all divisions were awarded some of the finest trophy hardware seen this side of the Mississippi. Congratulations to the champions and to all the players who participated in another fine golf tournament.

Our special thanks to the golf committee; who like all sports committees, took their share of ribbing and gripes but as usual did a wonderful job. Thank you, Ken Moran, George Miller, Don Woods and Ed Miller.

**Don't Forget the Big
TURKEY SHOOT
November 3
At Broadmoor
9:00 a.m.**

Ron Benoist of 619 Swing and Al Davis of 602 Graveyard, took in the special Moose hunt in Alberta Province, Canada. Total license and tag fees were \$52.00 each. With his converted Mauren 30-06, Ron downed a 2 year old Bull Moose that dressed out at 437 lbs. Ron is also a re-loader and was using 200 grain Nosler partitioned bullets.

The Moose was shot at 40 yards, but it took 5 shots to bring him down, 2 in the neck, 2 in the head and one in the chest. The rack was a small nontypical rack, and we hope to get a picture of the rack for a future issue.

As this goes to press, we just heard Bob Rousch of 601 Swing, got a trophy-size Blacktail. We hope to have details and pictures on this one in the next issue.

This is still the Anglers Corner, and your Angler Scribe got in some hot Bass fishing this last weekend. It looked like we were going to draw a blank at first. Bass are of a decidedly choosy nature and, once they make a choice are one track minded about it.

So, we changed lines until we found one they would hit. It seems as soon as you find something you can get one Bass to hit, all the other Bass in the lake will hit it too. This was a small, fairly shallow lake of about two acres. As far as I know, it has no name. Just one of the many lakes scattered about near Skelton, Washington.

Once that F-7 frog finish flatfish was put on, it seemed to be a fish on every cast for awhile. The Bass ran from 7 inches to about 1.5 inches and 2 pounds in weight. In one area of the lake, everything we caught was in this two pound class. And don't let anyone kid you, a 2 pound Bass on Ultra-lite tackle is a handful, especially when they swim into the brush which they always tried to do.

I would hate to say how many Bass we caught and released, but it was a great many. We didn't keep any as we didn't want to eat any that day, and none were hooked deep enough to be hurt.

Did You Know?

A TYPE OF "SHOT PEENING" was practiced by history's blacksmiths in sword making. They found by continued hammering, after the steel lost its forging temperature, a tougher product was possible. Today, we still perform this procedure but under a controlled process.



Bruce Wong, with pellets, cut wire, of glass beads can increase fatigue life of parts up to 3000%. This is true for steel, aluminum, and alloy metals where residual stress are detrimental.

When parts are subject to fatigue (stress corrosion), shot peening can decrease stress levels, or even remove them completely, thereby reducing potential failure. Shot peening can produce compression stresses to a depth of .030 inch in certain cases. Figure 1 depicts the microstructure (or grain effect) and the possible "residual" stress condition. Figure 2 shows how grain is affected after shot peening.

Shot peening when properly controlled can give a desirable compressive stress. It is not true that "over-blasting" is added benefit. Over-blasting costs money in time and material. The maximum depth of effectiveness is normally considered as .030 inch. "Over-peening" causes distortion which can result in part rejection. Also, this could cause high compressive loads on one

side and "residual tensile loads" on the other, if the part is relatively thin as well as exceeding the customer's surface finish requirements.

All customers have their own specifications that must be met; such as type of shot, control of mechanical application and other operating parameters. These parameters must be established to meet the desired intensity. Once established it must be consistently reproducible and verified by Quality Control.

This, in short, describes the why's and how's of shot peening and a portion of the specific details. It is hoped this helps to explain why industry requires shot peening on most critical items on today's critical airframe components.

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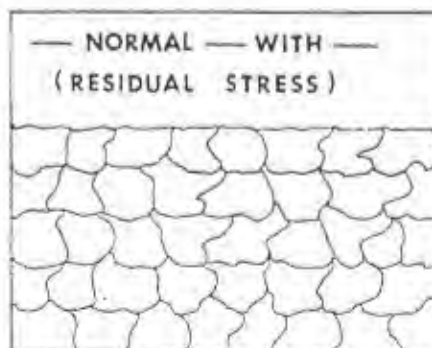


FIGURE 1

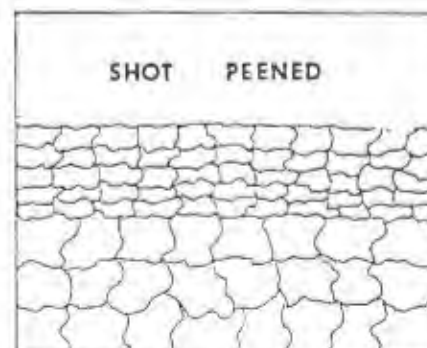


FIGURE 2